

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

Claims 1-20 (Canceled).

21. (Currently amended) A method of generating a mononucleoside library comprising a first mononucleoside and a second mononucleoside, a plurality of modified mononucleosides comprising:  
providing covalently coupling a first mononucleoside and a second mononucleoside to a solid support, respectively, each of the first and second mononucleosides having a heterocyclic base that is covalently coupled to a sugar, and each of the first and second mononucleosides further having a reactive group on at least one of the heterocyclic base and the sugar and each being coupled to a solid support; and reacting the reactive group of the first and second mononucleosides with a first nucleophilic reagent and second nucleophilic reagent, respectively, thereby forming a first modified mononucleoside and a second modified mononucleoside, and thereby creating the mononucleoside library;  
wherein the second modified mononucleoside is chemically distinct from the first modified mononucleoside in at least one of the heterocyclic base and the sugar;  
and  
wherein the first reagent is covalently bound to the first modified mononucleoside at the heterocyclic base or the sugar, and wherein the second reagent is covalently bound to the second mononucleoside at the heterocyclic base or the sugar.

22. (Currently amended) The method of claim 21 wherein at least one of the first and second mononucleosides comprises a purine heterocyclic base.

23. (Currently amended) The method of claim 21 wherein each of the first and second mononucleosides comprises a sugar moiety and a heterocyclic base, and wherein the

reactive group is disposed on the heterocyclic base of the first and second mononucleosides.

24. (Currently amended) The method of claim 21 wherein each of the first and second mononucleosides further comprises a second reactive group.
25. (Currently amended) The method of claim 24 further comprising a step of reacting the second reactive group of the first and second nucleosides with a third reagent and a fourth reagent to form a further modified first mononucleoside and a further modified second mononucleoside, respectively, wherein the third reagent is covalently bound to the second reactive group of the first mononucleoside, and wherein the fourth reagent is covalently bound to the second reactive group of the second mononucleoside.
26. (Currently amended) The method of claim 21 wherein the first and the second nucleophilic reagents are selected from the group consisting of an alkyl, an aryl, an alkynyl, a Grignard reagent, an alcohol, and an amine.